

IN THE SPECIFICATION:

Please replace the paragraph beginning on Page 5, line 15, with the following:

1
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The mechanism of the present invention is not yet clear, but it is supposed that higher sensitivity is obtained because the thermal conductivity at the interface of the support of the photosensitive layer is decreased by forming the inorganic layer (anodic oxide coating) having specific ~~properties~~ properties. An example is a thermal insulator formed on the substrate of aluminum (alloy) having the above-mentioned specific properties. Sensitivity may be increased when a sealing process is carried out such that only the surface of anodic oxidation coating is sealed and the opening in the inner portion remain.

[Please replace the paragraph beginning on Page 5, line 26 and ending on Page 7, line 1 with the following:]

In a preferred embodiment of the present invention, by further blocking the portion of the coating surface which has vacancies by subjecting said coating surface to a sealing process, a layer formed of a low density coating which holds air inside is formed, and thus a further increase in sensitivity is achieved. A support having this structure is also advantageous since formation of a residue film of the lipophilic compositions such as the dyes and binders and the like in the photosensitive layer is effectively prevented. Another advantage is the penetration of ink into the vacancies at the time of printing is controlled thus staining is suitably prevented. If the features of (ii) particularly are included, the contact angle of the exposed non image portion after the developing process is kept at not

B 1
more than 20 degree because of the existence of the anodic oxide coating. Accordingly staining of the non image portion is efficiently prevented since the surface of the portion has hydrophilic and ink ~~repelling~~ repelling properties, and thus formation of image with high quality is performed. Moreover, a micropore (vacancy) having predetermined shape and a predetermined diameter is obtained by treating the anodic oxidation coating with acid or alkali, thus further increasing sensitivity and hydrophilic property. This process may be combined with sealing the anodic oxidation coating to obtain a micropore (vacancy) with having a predetermined shape and a predetermined diameter. A support of this type is able to provide both high sensitivity because of superior thermal insulative property and to effectively prevent a residual film of dye and /or binder in photosensitive layer from forming, and moreover anti-staining property is increased because of the increased hydrophilic property.

Please replace the paragraph beginning on Page 8, line 10, with the following:

B 2
An aluminum substrate forming a substrate of the support comprises metals having dimensional stability ~~aluminum~~ such as those having aluminum as a main component. That is aluminum or aluminum alloys may be used. In the present invention the term "aluminum substrate" when used hereinafter includes, in addition to a pure aluminum plate which inevitable which inevitably has impurities, an alloy metal board plate composed of mainly aluminum and of a little small amount of other elements, or plastic film or paper onto which aluminum was laminated or evaporated.

Please replace the paragraph beginning on Page 10, line 6, with the following:

B³
The graining process useful in the present invention is the electrochemical process wherein graining is performed in an electrolyte solution with hydrochloric acid or nitric acid. The suitable amount of electric current density is in the range of 50 C/dm² through 400C/dm² of anode-time electricity. More practically, the process is performed using AC or DC in an electrolyte solution containing 1 to 50 percent of hydrochloric acid or nitric acid, at a temperature of 20 degrees through 100 degrees Celsius, for 1 second through 30 minutes, an at electric current density of 100 C/dm² through 400 C/dm². This electrochemical roughening process can easily provide a fine ~~concave~~ concave-convex surface and cannot be omitted if adhesive power between photosensitive layer and substrate is to be increased.

Please replace the paragraph beginning on Page 13, line 27 and ending on Page 14, line 7 with the following:

B⁴
Especially in condition (ii) of the present invention, the anodic oxidation coating is preferably formed with vacancy ratio in the range of 20 percent through 70 percent, preferably 20 to 60 percent and more preferably in the range of 30 percent through 50 percent. If the vacancy ratio is less than 20 percent, increase in sensitivity is ~~insufficient~~, insufficient, and if more than 70 percent anti-staining property has tendency to be poor. Thus a vacancy ~~ratio~~ ratio less than 20% and more than 70% is undesirable.-

Please replace the paragraph beginning on Page 15, line 24 and ending on Page 16, line 24 with the following:

6
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The following treating condition is preferable in order to obtain above-mentioned dissolution amount. The specific conditions are as follows: when treatment is performed in acid aqueous solution it is preferable to use sulfuric acid or phosphoric acid or a mixture thereof; concentration in the range of 10 grams/liter through 500 grams/liter preferably 20 grams/liter through 100 grams/liter; temperature in the range of 10 degrees Celsius through 90 degrees Celsius preferably 40 degrees Celsius through 70 degrees Celsius; and a treating period of 10 seconds through 300 seconds preferably 30 seconds through 120 seconds. On the other hand, when treatment is performed in alkali aqueous solution it is preferable to use sodium hydroxide, potassium hydroxide, lithium hydroxide or a mixture thereof; pH value of the aqueous solution in the range of 11 through 13 preferably 11.5 through 12.5; temperature in the range of 10 degrees Celsius through 90 degrees Celsius preferably 30 degrees Celsius through 50 degrees Celsius; and a treating period of 5 seconds through 300 seconds preferably 10 seconds through 30 seconds. If treatment is performed under less restrictive conditions than those mentioned above dissolution will take longer resulting in inferior operation efficiency, and if performed under more restrictive conditions, the anodic oxidation coating is dissolved in an extremely short period making it practically impossible control the coating. Therefore conditions not within the above mentioned preferable range are ~~not desirable~~ not desirable.

Please replace the paragraph beginning on Page 18, line 15, with the following:

B⁶
The diameter of the micropore (vacancy) of anodic oxidation coating is preferably not more than 15 nanometers, and more ~~preferably~~ preferably not more than 10 nanometers. If the diameter exceeds than the desired range, for example if it is not less than 20 nanometers anti-staining property in printing has a tendency of decreasing.

Please replace the paragraph beginning on Page 19, line 12 and ending on Page 20, line 1 with the following:

B⁷
In addition, a method may be used to form a layer comprising compound(s) selected from the following compounds; carboxymethyl cellulose, dextrin, Arabic gum, phosphonic acids having amino group such as 2-aminoethylphosphonic acid, organic phosphonic acids such as phenylphosphonic acid, naphthyl phosphonic acid, alkyl phosphonic acid, glycerophosphonic acid, methylene diphosphonic acid and ethylene diphosphonic acid wherein all these acids may have substituent, organic phosphoric acid ester of phenyl phosphoric acid, naphthyl phosphoric acid, alkyl phosphoric acid and as glycerophosphoric acid wherein all these esters here may have substituents, organic phosphinic acids such as phenyl phosphinic acid, naphthyl phosphinic acid, alkyl phosphinic acid and glycerophosphinic acid wherein all these acids here may have substituents, amino-acids such as ~~glycin~~ glycine or β -alanine and hydrochlorides of amines having hydroxyl group such as hydrochloride of triethanolamine.

[Please replace the paragraph beginning on Page 20, line 2 and ending on Page 21 line 12 with the following:]

B 1

In sealing process silane coupler(s) having an unsaturated group may be applied. Example include: N-3-(acryloxy-2-hydroxypropyl)-3-aminopropylethoxysilane, (3-acryloxypropyl)dimethylmethoxysilane, (3-acryloxypropyl)methyldimethoxysilane, (3-acryloxypropyl)trimethoxysilane, 3-(N-allylamino)propylmethoxysilane, allyldimethoxysilane, allyltriethoxysilane, allyltrimethoxysilane, 3-butenyltriethoxysilane, 2-(chloromethyl)allyltrimethoxysilane, methacrylamidopropyltriethoxysilane, N-(3-methacryloxy-2-hydroxypropyl)-3-aminopropyltriethoxysilane, (methacryloxydimethyl)dimethylethoxysilane, methacryloxymethyltriethoxysilane, methacryloxymethyltrimethoxysilane, methacryloxypropyldimethylethoxysilane, methacryloxypropyldimethylmethoxysilane, methacryloxypropylmethyldiethoxysilane, methacryloxypropylmethyldimethoxysilane, methacryloxypropylmethyltriethoxysilane, methacryloxypropylmethyltrimethoxysilane, methacryloxypropyltris(methoxyethoxy)silane, methoxydimethylvinylsilane, 1-methoxy-3-(trimethylsiloxy)~~butadiene~~ butadiene, styrylethyltrimethoxysilane, 3-(N-styrylmethyl-2-aminoethylamino)-propyltrimethoxysilane hydrochloride, vinyl dimethylethoxysilane, vinyl diphenylethoxysilane, ~~vinylmethyldiethoxysilane~~ vinylmethyldiethoxysilane, vinylmethyldimethoxysilane, O-(vinylxyethyl)-N-(triethoxysilylpropyl)urethane, vinyltriethoxysilane, vinyltrimethoxysilane, vinyltri-t-butoxysilane, vinyltriisopropoxysilane, vinyltriphenoxysilane, vinyltris(2-methoxyethoxy)silane and diallylaminopropylmethoxysilane. Of these silane couplers, coupler(s) having a

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methacryloyl group or an acryloyl group having quick reactivity with an unsaturated group is preferably used. However any of the couplers having vinyl group and/or allyl group with di-functional unsaturated group may be used.

Please replace the paragraph beginning on Page 23, line 8, with the following:

B⁸
Suitable polymers for the recording layer of the present invention ~~preferably~~
preferably include homopolymers having an acidic group in its main chain and/or side chain. Copolymers of these or mixtures thereof are also preferably used.

Please replace the paragraph beginning on Page 23, line 27 and ending on Page 24 line 7 with the following:

B⁹
In the alkaline water soluble polymer having an acidic group selected from (1) through (6), an alkaline water soluble polymer comprising (1) a phenol group, (2) a sulfonamide group and (3) an active imide group are preferably used, and alkaline water soluble polymer comprising (1) a phenol group and (2) sulfonamide group are ~~particularly~~
particularly preferable because of solubility in the alkaline developer, developing latitude and because coat strength is sufficient.

Please replace the paragraph beginning on Page 24, line 20 and ending on Page 25 line 17 with the following:

B¹⁰
From the view point of image recording ability the weight average molecular weight of alkaline water soluble polymer is preferably in the range of 5.0×10^2 through 2.0×10^4 and the number average molecular weight is preferably in the range of 2.0×10^2 through 1.0×10^4 . And moreover these polymers may be used separately or two or more of them may be used in combination. When two or more polymers are used in combination, polycondensation polymer obtained from phenols having alkyl substituent having 3 through 8 carbons and formaldehyde such as polycondensation polymer of t-butylphenol and formaldehyde or a condensation polymer of octylphenol and formaldehyde may be used in combination as described in USP No.4123279.

(2) As alkaline water soluble polymer having sulfonamide group, for example, a polymer wherein a least component unit derived from compounds with ~~sufonamide~~ sulfonamide group is used as main component may be used. An example of the compound mentioned above is a compound having one or more ~~sufonamide~~ sulfonamide group with at least one hydrogen atom bonded to nitrogen atom and one or more unsaturated polymerizable group respectively. In the examples described above a compound with low molecular weight and has acryloyl group, allyl group or vinyloxy group, and substituted or mono-substituted ~~amono~~aminosulfonyl ~~amono~~aminosulfonyl group or substituted sulfonylimino group in the same molecule as is shown below in general formulae 1 through 5 is particularly preferable.

Please replace the paragraph beginning on Page 26, after the formulas, with the following:

B¹¹

In the formulae X^1 and X^2 represent -O- or -NR²⁷ - respectively. R²¹ and R²⁴ represent a hydrogen atom or -CH₃; R²², R²⁵, R²⁹, R³² and R³⁶ represent respectively an alkylene group, a cycloalkylene group, an allylene group or an ~~alkylene~~ aralkylene group having 1 through 12 carbons and which may have substituent(s); R²³, R²⁷ and R³³ represent respectively a hydrogen atom or an alkyl group, a cycloalkyl group, an allyl group or an ~~alkyl~~ aralkyl group having 1 through 12 carbons and which may have substituent(s); R²⁶ and R³⁷ also represent respectively an alkyl group, a cycloalkyl group, an allyl group or an ~~alkyl~~ aralkyl group having 1 through 12 carbons and which may independently have ~~single~~ single bonds or may have substituent(s); R²⁸, R³⁰ and R³⁴ represent hydrogen atom or -CH₃ respectively; R³¹ and R³⁵ represent respectively a single bond or an alkylene group, a cycloalkylene group, an allylene group or an ~~alkylene~~ aralkylene group having 1 through 12 of carbon and which may have substituent(s); Y³ and Y⁴ represent single bond or -CO- respectively.

Please replace the paragraph beginning on Page 31, line 23 and ending on page 32, line 3 with the following:

B¹⁸

The dyes conventionally known to be available such as those described in "Guidebook for Dyestuff" (Senryo binran) published by The Society of Synthetic Organic Chemistry, Japan in 1970 may be used may be used. Examples of the dye are as follows; metal complex azo dyes, pyrazolone azo dyes, naphthoquinone dyes, anthraquinone dyes,

B¹²
phthalocyanine dyes, carbonium dyes, quinonimine dyes, methine dyes, cyanine dyes,
~~squarilium~~ squarylium colorant, pyrylium salt and metal ~~thiolate~~ thiolate complex.

Please insert the following paragraph on Page 35 between line 16 and 17:

B¹³
In the apparatus shown in Fig. 2, an aluminum plate W is set by winding, to a radial drum roller 12 which is positioned under an electrolyte 15 in a primary electrolysis tank 10, and then the aluminum plate W is subjected, during conveyance, to electrolysis processing by primary nodes 13a and 13b, through a slit 16. The aluminum plate W which has been processed in the primary electrolysis tank 10 is subjected to electrolysis processing in an auxiliary anode tank 20, within which an auxiliary anode 23 is positioned opposing the aluminum plate W, and to which the electrolyte 15 is supplied so that the electrolyte 15 flows through a space between the auxiliary anode 23 and the aluminum plate W and drains into an electrolyte discharge port 18.

Please replace the paragraph beginning on Page 38, line 18 and ending on Page 39 line 10 with the following:

The composition of the coating solution 1 for a photosensitive layer is as follows.

B¹⁴

| | |
|--------------------------------------|-----------|
| Capric acid | 0.03 gram |
| specific copolymer 1 described below | 0.75 gram |
| m-,p-cresol novolac | 0.25 gram |

(m/p ratio = 6/4, weight average molecular weight 3500, unreacted cresol 0.5 percent by weight contained)

B¹⁴

| | |
|--|------------|
| p-toluenesulfonic acid | 0.003 gram |
| tetrahydrophthalic acid anhydride | 0.03 gram |
| cyanine dye A (structure described below) | 0.017 gram |
| dye in which counter ion of victoria pure blue BOH is modified by 1-naphthalenesulfonic acid | 0.015 gram |
| fluoro-based surfactant | 0.05 gram |
| (trade name: MEGAFACK F-177, by DAINIPPON INK AND CHEMICALS, Inc.,) | |
| γ-butyrolactone <u>butyrolactone</u> | 10 grams |
| methylethylketone | 10 grams |
| 1-methoxy-2-propanol | 1 gram |

Please replace the paragraph beginning on Page 40, line 12 and ending on Page 40 line 9 with the following:

B¹⁵

In a 20 milliliters three-neck flask with stirrer, condenser tube and dropping funnel, 4.61 gram of N-(p-aminosulfonylphenyl)methacrylamide (0.0192 mole), 2.94 gram of ethylmethacrylate (0.0258 mole), 0.80 gram of acrylonitrile (0.015 mole) and 20 grams of N,N-~~dimethylacetoamide~~ dimethylacetamide are introduced. The mixture is stirred while being heated to 65 degrees Celsius in a water bath. To the mixture, 0.15 gram of a polymerization initiator -65 (trade name, product of Wako Pure Chemical Industries, Ltd.) is added and the mixture is maintained at "V-65" degrees Celsius under nitrogen flow kept while being stirred. Into the reaction mixture, the mixture of 4.61 gram of N-(p-

B⁵
aminosulfonylphenyl)methacrylamide, 2.94 gram of ethylmethacrylate, 0.80 gram of acrylonitrile, N,N-dimethylacetamide dimethylacetamide and 0.15 gram of a polymerization initiator -65 is further added by dropping down for 2 hours. After dropping is completed, the mixture is stirred at 65 degrees Celsius for 2 hours. After the reaction was ended, subsequently 40 grams of methanol is added into the mixture and cooled. The mixture obtained is then poured into 2 liters of water with while being stirring stirred and the sludge is removed by filtering and dried to obtain 15 grams of white solid. Weight average molecular weight of the specific copolymer 1 is determined measured using the gel permeation chromatography method. The ~~value~~ value was 53000 (with polystyrene being the reference).

Please replace the paragraph beginning on Page 42, line 6 with the following:

B¹⁶
After printing of 100 sheets of paper is performed with the planographic printing plate thus obtained using printing machine SOR-M (trade name, by Heidelberg Heidelberg Co., Ltd.), printing is stopped and the machine is left for 30 minutes. After 30 minutes printing is started again to print 100 sheets of paper. Removability of ink from non image portion is evaluated based on the standard as follows.

Please replace the paragraph beginning on Page 43, line 8 with the following:

B¹⁷
A coating is formed by spattering substrate A in a spattering apparatus with Al_2O_3 as the target material under the conditions of 5 millitorr of Ar as the ~~atmosperie~~ atmospheric gas and a Rf of 1 kilowatt for 27 minutes. The same process as in Example i-

B¹⁷
4 is performed to obtain planographic printing plate except that anodic oxidation process is not carried out. The planographic printing plate obtained in the same manner as Example i-1 is referred to as Comparative example i-1. The same evaluation as Example i-1 is carried to obtain a coating density of density of 3900 kg/m³. The results of other evaluations are shown in Table 2.

Please replace the paragraph beginning on Page 45, line 14 and ending on Page 46 line 6 with the following:

B¹⁸
The same process is performed as process (a) through (i) except that in the process (g) anodic oxidation process is carried out on substrate A with an aqueous solution of ~~sulphuric~~ sulphuric acid having a concentration of 170 grams/liter (containing 0.5 percent by weight of aluminum ion), at temperature of 40 degrees Celsius, at current density of 30 A/dm² and for 20 seconds. Substrate D-1 is obtained.

Please replace the paragraph beginning on Page 46, line 27 and ending on Page 47 line 11 with the following:

B¹⁹
The weight of oxide coating per unit area is obtained as follows; after non image portion after development is cut to a desired size and dissolved by Mason liquid comprising ~~eromic~~ chromic acid/phosphoric acid and the weight of the oxide coating is calculated from loss. Thickness of anodic oxidation coating is obtained as follows; measurement is performed at 50 points of the cross-section of the non- image portion area of the anodic oxidation coating after developed development by are viewed with a scanning

B¹⁹
electron microscope T20 (by JAPAN ELECTRON OPTICS LABORATORY CO., LTD.)
and measurement is performed at 50 points. Average value is calculated from the 50 data
values obtained. Results obtained are shown in Table 3.

Please replace the paragraph beginning on page 48, line 11, with the following:

B²⁰
The developed planographic printing plate is placed in printing machine SOR-M
(trade name, Heiderberg Heidelberg Co., Ltd.). Ink is introduced on the entire printing
surface and then water and paper feeds are started. The ink corresponding to the non
image portion is removed. The amount of paper loss until non image portion having no
stain on the printed matter is obtained is defined as anti-staining property of printing. The
lower the amount of paper loss, the better anti-staining property. Results obtained are
shown in Table 3.

Please replace the paragraph beginning on Page 49, line 2, with the following:

B²¹
The planographic ~~printing~~ printing plate of Example ii-2 is manufactured by the
same process as that of Example ii-1 for obtaining substrate D-2 except that after the
substrate is immersed in an aqueous solution of sodium hydroxide with a pH of 13 at 30
degrees Celsius for 45 seconds it is immersed in an aqueous solution of NaF having a
concentration of 0.1 percent by weight and of NaH₂PO₄ having a concentration of 10
percent by weight at 100 degree Celsius for 1 minute instead of carrying out a steam
sealing treatment. The same evaluation as in Example ii-1 is performed, and the results are
shown in Table 3.

Please replace the paragraph beginning on Page 50, line 22 and ending on Page 51
line 2 with the following:

B 22
The same process as the process of manufacturing substrate D-2 in Example ii-2 is performed for obtaining a planographic printing plate of Comparative example of ii-3 except that instead of ~~immerson~~ immersion in an aqueous solution of NaF and NaH₂PO₄ the substrate is immersed in 1 percent by weight aqueous solution of barium sulfate at 95 degree Celsius for 2 minutes. The same evaluation as in Example ii-1 is performed and the results are shown in Table 3.
